

Ripples from the Columbian Exchange?

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There is little doubt that the Columbian exchange was one of the greatest disruptions of food production and consumption across the world. The exchange resulted, amongst many other things, in the extensive growing of sugar-cane in the Americas. This encouraged the slave trade, with millions of Africans transported across the Atlantic, while the consumption of the resulting sugar led to the deaths of millions of people. Vast numbers of native Americans died as a result of diseases introduced by the domestic animal-owning Europeans. Wheat from the Old World colonised the North American prairies displacing most of the roaming herds of bison. Potatoes and manioc from the Americas quickly became vital food crops in Europe and in Africa. All this is well-known (see, for example, Nunn and Qian, 2010; Boivin, Fuller and Crowther, 2012; Grennes, 2007). In general, food movements both of plants and animals, took place relatively quickly after 1492, especially when compared to earlier episodes of food globalisation, such as the Trans-Eurasian exchange which took place over several millennia (Boivin *et al.*, 2012; Jones *et al.*, 2016).

This paper will consider whether evidence of ripples from the Columbian Exchange, can still be found today, in a world of increasingly globalised food consumption and production on both sides of the Atlantic. It might be assumed that the consumption of certain foodstuffs retains an element of resilience in their homeland: for instance, might nationalist gastronomic movements and ideologies promote elements of their own pre-Encounter diet? However, as we shall see, most food products, vegetable or animal, seem to be able to ‘globalise’ with considerable ease.

To examine these movements, I first analysed the ‘national dishes’ of the continents on each side of the Atlantic, that is, in Europe, Africa and the Americas, to see whether a preponderance of pre-1492 ingredients from its particular side of the ocean was present in these dishes. ‘The Americas’ include North, Central and South America and not Hawaii and other Pacific Islands. Of course, national dishes may not always fully reflect what is normally eaten in a given country and this can only be a broad-brush study, but I shall assume that a national dish will broadly correspond with what is normally eaten. Secondly, I will briefly focus on the production not the consumption of food, and will examine recent and present-day quinoa production, to see why the farming of the crop did not globalise in the same way as so many of the other ingredients.

When discussing the Columbian exchange there is an immediate problem with terminology: should we use more neutral terms like ‘the Encounter’ while rejecting the ‘New’

and ‘Old World’ which are clearly concepts viewed from a European perspective. The ‘New World’ might be replaced by ‘The Americas’ but this again has European origins as it is named after Amerigo Vespucci from Florence. The term ‘New World’ (*Mundus Novus*) was first coined by Amerigo in a letter written to a friend in the Spring of 1503, and published in 1503 to 1504 under the title *Mundus Novus*. Vespucci claims here that the lands discovered by European navigators across the Atlantic were not the edges of Asia, but rather an entirely different continent, in other words, a ‘New World’. With such a long history of use, for the purpose of this paper, I shall use the terms ‘Old World’ and ‘The Americas’ while acknowledging the European bias intrinsic in these terms. Note that James C. McCann prefers to use the term ‘Atlantic Circulation’ as the food stuffs moved both ways (McCann, 2009, 25–6). For instance, African slaves brought crops back to the Americas, crops which had been originally from the Americas and which they had become accustomed to growing and eating in Africa.

National dishes

In many nations the concept of a national dish is a recent one. For example, when I wrote about African cuisines in 2000 (Cusack, 2000) it was clear that many African nations did not yet have defined national cuisines or a national dish, whilst some countries had only recently acquired something recognised as such. However, the dominant ideology of nationalism which proclaims that nations have a unique cuisine and one – or more – national dishes means that by 2020 most nations claim to have at least one such dish. How to decide then what is the national dish of a particular country? Most countries have a number of dishes which might be considered for this accolade and I shall briefly examine the case of Cameroon to illustrate this problem.

In an ethnically diverse country such as Cameroon it will be harder to tie down what is the acknowledged national dish because regions and ethnic groups often have their own dishes which serve as their culinary identity markers. The diversity of ethnic cuisines of the country is shown in Grimaldi and Bikia’s *Le Grand Livre de la Cuisine Camerounaise* (1985). Some might consider that *Poulet DG* (which literally stands for chicken managing director) is a national dish. This dish of chicken and plantains emerged in the 1980s in the cities and it is designed to enable the supposedly busy business men to eat quickly at lunchtime. It is seen as one of the ‘reference

dishes' of Cameroon '*Il est l'un des plats de référence*' (Bella Ola, *et al*, 2003, 74–7). However, now the generally accepted national dish of Cameroun is *ndolé*: this is made from bitter-leaf (*Vernonia amygdalina*) which has to be treated, in one method, by boiling in water for at least thirty minutes, and then pounding at least three times to produce a green sauce. Recipes for *ndolé* include peanuts and it can be served with shrimp or beef or both (Bella Ola, *et al*, 2003: 30–33; Mun'a Yous, 1999: 29–31; Livres Group, 2010: 5–7). This is a dish originally from the coastal areas of Cameroon around the city of Douala. Many online sites, including Wikipedia, now claim that *ndolé* is the national dish. The importance of *ndolé* in the national construction of Cameroon is again stressed in Tess Do and Charlotte Mackay's contribution to Tégua Bogni's (editor) recently published book, *La Cuisine Camerounaise* (Do & Mackay, 2019, location, 645). Finally, we should note that as early as 1993, Flavien Ndonko Tiokou claimed that *ndolé* had practically become the emblem of the national cuisine ('[...] *le ndolé [est] pratiquement devenu l'emblème de la cuisine nationale*') (1993, p.111). To conclude, we can reasonably accept that *ndolé*, despite its regional origins, has become the recognised national dish of Cameroon.

Various possible dishes from each country considered below could be examined in such a way before deciding on one national dish, but this would be too vast an enterprise to undertake here. The example from Cameroon above shows that there may be some difficulty in deciding what is the national dish for a particular country. For this paper I decided to use three books by Anne-Sophie Parmenthier and Kalinka Sikorzinski which include all the national dishes on each side of the Atlantic, and, which crucially, include details of the ingredients needed to prepare them. Checking various websites suggests that the national dishes included in these books are reasonable choices. In looking at the ingredients of these dishes and labelling them as Old World or from the Americas, and then analysing the proportions of ingredients from these two worlds, there might well be other distortions in the analysis. For example, it may be that there is a tendency to consider that a national dish should contain meat. If that were to be the case, then any conclusions would be biased towards the Old World as that is from where the main meats originate: beef, lamb, chicken or pork. For the analysis below, I have taken each ingredient as having equal weight. A dish based on potatoes might contain some black pepper, garlic, onion and parsley, so that it would appear to have a preponderance of Old World ingredients. Old World ingredients are here considered as those which existed in Europe and Africa at the time of the Columbian Exchange, which would have included, for example, bananas and plantains, which were introduced from Asia in the 14th century (Sheldon, 2017, 26).

I shall analyse the national dishes as set out in three books: *L'Afrique dans votre assiette! L'Amérique dans votre*

assiette! and *L'Europe dans votre assiette!* by Parmenthier and Sikorzinski (2013). I have set out below in Table 1 the ingredients of all the national dishes from the recipes in these three books above and allocated each ingredient to either the Old World or to the Americas. I have excluded salt, water and unspecified oil or vegetable oil from the analysis. Seafood is also excluded (unless some very local species is specified in the recipe) as the ocean is rather a poor barrier to fish and shellfish travelling across the water. For example, it would not be possible to allocate cod to the Old World or to the Americas.

Results of the Analyses of the National Dishes of Africa, The Americas and Europe.

The most common ingredient in the recipes of the 133 national dishes examined (54 from Africa, 35 Americas and 44 Europe) is the onion (103). This is followed by the capsicum in some form (peppers, chilis and paprika) (84), black pepper (63), tomato (59) and garlic (55). At least one type of meat, and often more than one, are included in the recipes of 80 of the national dishes; there are 25 dishes that include some seafood (which are not allocated to either the Americas or the Old World for the reason set out above) and there are 30 that do not include any meat or fish. (See Tables 3 & 4) It should be noted that the latter dishes are not always strictly vegetarian as they may include ingredients such as non-vegetable stock or non-vegetarian cheese. American meats such as turkey, llama, guinea-pig, or bison do not make any appearances. This is no surprise as all the nations in the Americas were once colonies where European settlers disproportionately influenced the emerging national cuisines.

Among these dishes, for Africa and the Americas there is a similar ratio of Old World to American ingredients: Africa has 2.56 Old World ingredients for every one American ingredient while the Americas have 2.91 Old World ingredients for every one American ingredient. (Table 2) This similarity reflects the mainly tropical and sub-tropical growing conditions in these continents. Furthermore, the temperate part of the Americas is occupied by just two countries with the many small island states in the Caribbean carrying equal weight to their large North American neighbours. For Europe, on the other hand, the ratio is 5.37 Old World ingredients to every one American ingredient. (Table 2) All this is on the basis that every ingredient is equivalent to any other: so black pepper say, has equal weight to pork or potatoes.

The Old World ingredients seem to be dominant in all three continents with little evidence that the pre-Encounter products are dominant in their original American homelands. However, some of the American ingredients are more dominant than these straight figures would suggest. For example, in Europe the potato is included in eighteen recipes, far more than in Africa or the Americas. Chili peppers are used widely in Africa – more

Country	Dish	Ingredients from the Old World	Ingredients from the Americas
AFRICA			
Algeria	Couscous	lamb, chickpeas, olive oil, onion, turnip, bouquet garni, couscous, carrot, cumin, clove	sweet pepper, harissa, courgette, tomato
Angola	Muamba de galinha	chicken, palm sauce (moambe), chicken stock cube, onion, garlic, bay leaf, thyme, butter	pili pili (piripiri), ground nut oil, manioc leaves (saka saka)
Benin	Calalou	meat, spinach, okra, onions, (shrimps), palm oil, black pepper	green pepper, manioc leaves
Botswana	Seswaa (with sauce)	beef, onion, garlic, butter	maize
Burkina Faso	Tô Sauce Gombo	millet, lemon, onion	habanero chili, maize
Burundi	Boko Boko Harees	chicken, millet, bulgur wheat, turmeric, sugar, butter	
Cameroon	Ndolé	(prawn), ndolé, onion, garlic, (oil), stock cube	red pepper, tomato, chili, peanut
Cape Verde	Cachupa	chicken, pork, chorizo, cabbage, carrot, garlic, onion, black pepper	maize, white beans, red pepper, green pepper, sweet potato, manioc, tomato, potato, chili
Central African Republic	Ngoudja na Niama	beef, palm oil, onion, garlic, aubergine, stock cube	peanut oil, peanut butter, manioc leaves
Chad	Millet Ball	millet. [or rice flour, or sorghum or maize]	
Comores	M'tsolola	(fish), plantain, coconut	chili, tomato
Congo Rep.	Saka Saka (Pondu)	(fish, tin of pilchards or sardines), aubergine, leek, onion, garlic. : manioc leaves, green chili, peanut butter	
Côte d'Ivoire	Foutou	banana	manioc
Djibouti	Skoudehkaris	lamb, rice, onion, (oil), cumin, clove, garlic, cardamom, black pepper	chili, tomato
DRC	Chicken Moambe	chicken, onion, aubergine, palm oil, basil	red chili, tomato, saka saka (tin of manioc leaves)
Egypt	Kochari or Koshari	rice, 3 types of pasta, lentil, chickpea, cumin, onion, flour, garlic, vinegar, black pepper	paprika, chili, tomato
Equatorial Guinea	Pépé soup	(fish) onion, parsley, stock cube	red chili, tomato, peanut oil
Eritrea	Zigni with Bereberé	beef, onion, ginger, garlic, caraway, cardamom, cinnamon, black pepper	paprika, chili, tomato, peanut oil
Ethiopia	Doro Wat with Injera	chicken, egg, shallot, onion, garlic, ginger, cardamom, butter, tej (mead), lemon, black pepper, caraway, cinnamon	paprika, chili, tomato, peanut oil
Gabon	Chicken Nyembwe	chicken, onion, garlic, celery, bay leaf, stock cube, black pepper	moambe (manioc leaves), tinned tomato, peanut oil
Gambia	Jollof Rice	rice, chicken, beef, onion, garlic, carrot, white cabbage, aubergine, vinegar, bay leaf, black pepper, (oil)	tomato, pepper, chili, pumpkin

Table 1. Comparison of the number of ingredients from the 'Old World' or from the Americas. Note that some ingredients are not allocated to either Old World or America: salt, water, unspecified 'oil', most 'fish' or shellfish (except some local species). When a choice was included in the recipe, say maize or millet, both ingredients have been included.

so than in the Americas, while peanuts are commonly used in the recipes from West Africa. The ability to grow particular crops in a particular country seems to be more

important than any thought of reflecting a pre-Encounter diet. The culinary culture of a particular country or area may favour certain ingredients over others. For example,

Country	Dish	Ingredients from the Old World	Ingredients from the Americas
Ghana	Hkatenkwan, Peanut soup	chicken, onion, ginger, aubergine, okra	tomato, peanut butter, hot chili or cayenne. (Fufu is probably a better known Ghanaian National dish, but here they chose Hkatenkwan or peanut soup as Foutou was used for Côte d'Ivoire.)
Guinea	Wolof rice	(fish), (oil), rice, onion, parsley, garlic, stock cubes, aubergine, carrot, white cabbage, black pepper, okra	tomato, chili
Guinea-Bissau	Caldo de Mancara	chicken, onion, palm oil	tomato, peanut, red pepper
Kenya	Nyama Choma	beef, garlic, lemon, turmeric, coriander, black pepper	paprika. (Ugali is also a national dish of Kenya)
Lesotho	Afrikaanse Stoofschotel	onion, 'curry', white cabbage, (oil), black pepper	potato, tomato
Liberia	Goat Soup	goat, tripe, (goat feet), onion, garlic, stock cube, black pepper	scotch bonnet, tomato, (concentrate of tomato)
Libya	Shakshouka	dried, salted lamb; onion, garlic, turmeric, cumin, egg, coriander	green pepper, tomato, cayenne, (concentrate of tomato)
Madagascar	Romazava	beef, bredes mafane (tin, acmella oleracea), onion, garlic, ginger, bouquet garni	tomato
Malawi	Nsima		maize
Mali	Tiga Dégué	beef or chicken, onion, carrot, shallot, garlic, stock cube, (oil), black pepper	peanut butter, tomato, (concentrate of tomato), sweet potato, chili
Mauritius	Chicken Briani	chicken, basmati rice, onion, garlic, ginger, turmeric, cumin, black pepper, yogurt, mint, cardamom, cinnamon, clove, saffron (chicken stock)	tomato, chili, potato
Mauritania	Méchoui	lamb, lemon, olive oil, garlic, cumin, butter	mild chili, cayenne
Morocco	Couscous	beef, chicken, mutton, chickpea, onion, turnip, carrot, saffron, coriander, butter, black pepper	tomato, mild chili
Mozambique	Matapa	(prawn), coconut, onion, garlic, olive oil, chicken stock, black pepper	manioc leaf, fresh peanut
Namibia	Oshifima	pearl millet, milk	maize (use this or millet)
Niger	Tukasu	mutton, onion, dates, cumin, cinnamon, anis seed, black pepper, bread dough (wheat, yeast)	hot chili, tomato, (tomato concentrate)
Nigeria	Banga Soup	mixed meat, (dried fish), bush meat, (dried prawns), palm soup, beef stock, okra, cress, onion, black pepper	tomato puree, hot chili
Rwanda	Isombe	spinach, aubergine, palm oil soup, onion	manioc leaf (saka saka), green pepper, peanut butter
São Tomé e Príncipe	Calulu	(prawns, fish), okra, aubergine, onion, bay leaf, marjoram, flour	tomato, chili
Senegal	Thiéboudienne	(fish, dried fish), carrot, onion, turnip, aubergine, cabbage, garlic, parsley, rice	tomato concentrate, peanut oil, green pepper, sweet potato, red chili

Table 1. Continued.

Country	Dish	Ingredients from the Old World	Ingredients from the Americas
Seychelles	Octopus Curry	(octopus), coconut milk, garlic, aubergine, onion, turmeric, saffron, masala, cinnamon leaf, black pepper	
Sierra Leone	Groundnut Stew	(oil), aubergine, garlic, ginger, coriander, onion	sweet potato, cayenne, tomato, sweet pepper, courgette, peanut butter
Somalia	Cambuulo	Azuki beans, cream, butter, nutmeg, sugar	
South Africa	Bobotie	Lamb/beef, bread, onion, milk, egg, curry, sugar, black pepper, turmeric, ginger, raisins, bay leaf, lemon, apricot jam, vinegar	tomato purée
South Sudan	Foul as Sudan.	broad beans (tin or dried); garlic, lemon, onion, coriander, sesame oil, feta, hard-boiled egg, black pepper	red chili
Sudan	Foul or Ful	broad beans (tin or dried); garlic, lemon, onion, coriander, sesame oil, feta, hard-boiled egg, black pepper	red chili
Swaziland	Karoo roast ostrich steak	ostrich, cream, white wine, juniper berries, butter, green pepper seeds	pumpkin, maize flour
Tanzania	Ugali	millet or	or maize
Togo	Akoumé with gboma desi sauce	spinach, beef, onion, garlic, ginger, stock cube, black pepper	maize, peanut oil, chili, tomato concentrate
Tunisia	Fish Couscous	Ras el hanout, fine couscous, (fish), onion, chickpea, olive oil, cumin, black pepper	tomato concentrate, courgette, potato, chili, harissa. (Ras el hanout may contain up to 30 different OW ingredients)
Uganda	Matoké or Matooke	beef, (beef stock), plantain, lemon, onion, garlic, coriander	tomato, green pepper, chili, cayenne
Zambia	Nshima		maize
Zimbabwe	Sadza with Zimbabwe Dovi	chicken, spinach, onion, garlic, butter, black pepper	maize, cayenne, green pepper, tomato, peanut butter
THE AMERICAS			
Canada	Poutine	cheese, poutine sauce	potato
United States	Hamburger	bread, beef, cheddar cheese, onion, gherkin, fresh cream, parsley, shallot	tomato
Belize	Rice and beans and Chicken Stew	rice, coconut milk, chicken, black pepper, onion, garlic, bacon, sugar, vinegar, (oil)	red beans, peppers, paprika
Costa Rica	Gallo pinto	rice, onion, coriander, Worcestershire sauce, (oil), black pepper	black beans, pepper, salsa lizano
Guatemala	Pepian	chicken, sesame, onion, cinnamon, clove, chicken stock, olive oil, pain de mie	pumpkin seeds, chili, tomato, green tomato, sunflower oil
Honduras	Plato Tipico	beef, chorizo, chicken, pork, plantain, rice, lettuce, black pepper, cream	frijoles (red beans)
Mexico	Mole Poblano	onion, garlic, bread, plantain, almond, sugar, clove, bay leaf, chicken, olive oil, black pepper, raisin, sesame seed	ancho chili, chipotle chili, dried tortilla chili, dried mulato chili, dried pasilla chili, tomato, peanut, pumpkin seed, chocolate
Nicaragua	Gallo pinto	rice, onion, coriander, Worcestershire sauce, (oil), black pepper	red beans, pepper, salsa lizano

Table 1. Continued.

Country	Dish	Ingredients from the Old World	Ingredients from the Americas
Panama	Sancocho	chicken, plantain, onion, chicken stock cube, cumin, black pepper, fines herbs, olive oil, coriander leaf, oregano	potato, maize, tomato
El Salvador	Pupusa	onion, garlic, cheddar, black pepper, white cabbage, carrot, dried oregano, coconut vinegar, vinegar, sugar	maize (manseca), red beans, tomato, chili, sunflower seed oil, paprika, mild green chili
Argentina	Asado	beef, chorizo, kid, chicken, lettuce, olive oil, chimichurri (parsley, garlic, olive oil, oregano, red wine vinegar)	potato, maize
Bolivia	Salteña	wheat flour, margarine, sugar, egg, minced meat, petit pois, gelatine, onion, parsley, oregano, black pepper	potato, red pepper
Brazil	Feijoada	salted pork (meat, ribs, tail, ear, chops, trotter), chorizo, smoked pork sausage, bacon, coriander, onion, bay leaf, chive, orange	black beans, habanero chili
Chile	Empanada	wheat flour, olive oil, beef, sausage meat, green olive, onion, egg yoke, raisin	tomato
Colombia	Ajiaco	chicken, cream, celery, caper, garlic, coriander, chicken stock cube, black pepper	pastuca potato, sabanera potato, criolla potato, maize, guasca (<i>Galinsoga parviflora</i>), avocado
Ecuador	Ceviche	(prawns, fish), lemon or lime, orange, olive oil, white vinegar, mustard, black pepper	tomato, ketchup
Guyana	Pepperpot	beef, pork (meat, trotter, tail), cinnamon, sugar, onion, garlic, basil, thyme, black pepper	Cassareep (cassava sauce), red pepper
Paraguay	La Sopa Paraguaya	onion, egg, cheese (young gouda), milk, fresh cream	fine maize flour, maize kernels
Peru	Ceviche	(white fish) (prawns, squid, scallop), lime, red onion, coriander, black pepper	red pepper, maize, sweet potato, chili, tomato
Suriname	Pinda soup with tomtom	onion, garlic, carrot, celery, vegetable stock, black pepper	potato, chili, cayenne, peanut butter, maize kernels, (peanuts)
Uruguay	Chivito	bread, bacon, beef, egg, black forest ham, mayonnaise, provolone (cheese), lettuce, onion	tomato
Venezuela	Pabellón Criollo	beef, onion, leek, rice, garlic, beef stock cube, black pepper, saffron, cumin, plantain, (oil)	peppers, tomato, black-bean, chili
Antigua and Barbuda	Fungi and pepperpot	Salted beef, okra, butter, assorted meat, onion, garlic, spinach, aubergine, petit pois, clove, thyme, chive, margarine, black pepper, (vegetable oil)	maize, papaya, pumpkin, squash, ketchup
Bahamas	Crack Conch	wheat, black pepper, garlic powder, thyme, egg, pigeon peas, rice, onion, bacon	crack conches (local variety?), tomato
Barbados	Cou Cou and Flying fish	okra, butter, (flying fish), onion, garlic, celery, bay leaf, curry, mustard, sugar, mixed herbs	red pepper, maize, tomato, ketchup
Cuba	Moros y Cristianos	olive oil, onion, garlic, cumin, oregano, bay leaf, white vinegar, black pepper, rice, chicken stock	black beans, green pepper, tomato concentrate
Dominica	Mountain chicken	lime, garlic, black pepper, vinegar, thyme, wheat flour, butter	native frog (<i>Crapaud</i>)

Table 1. Continued.

Country	Dish	Ingredients from the Old World	Ingredients from the Americas
Dominican Republic	Sancocho	beef, chicken, pork, lemon, garlic, onion, black pepper, olive oil, sugar, plantain, basil, oregano, parsley, stock cube, mixed spices, (yam)	tomato concentrate, manioc, potatoes, maize, squash, pumpkin
Granada	Oil Down	Salted meat, coconut milk, celery, thyme, chive, onion, garlic	red chili, habanero chili
Haiti	Griots with rice and beans	pork, onion, orange, black pepper, thyme, rice, butter	red beans, green chili, red chili
Jamaica	Ackee and Salt fish	ackee, (salted cod), onion, shallot, thyme, black pepper, (vegetable oil)	tomato, red chili
St Kitts and Nevis	Stewed salt fish with dumplings, spicy plantain and breadfruit.	(salted cod), garlic, (veg. oil), margarine, shallot, parsley, onion, black pepper, plantain, ginger, coconut, wheat flour, breadfruit, thyme, chicken stock	green pepper, tomato, small chili, red pepper
St Lucia	Green Fig and Salt Fish	green bananas, (salted cod), cheddar, milk, lime, onion, black pepper, bread crumbs	pepper, tomato
St Vincent and the Grenadines	Roast Breadfruit and Fried Jack fish	(fish), breadfruit, lemon, onion, chives, thyme, garlic, black pepper, wheat flour, (oil)	
Trinidad and Tobago	Crab and Callaloo	taro leaves, okra, thyme, garlic, salted pig's tail, coconut, (crab), onion	squash, habanero chili
EUROPE			
Albania	Tavë Elbasani or Tavë Kosi	lamb, butter, wheat flour, white rice, egg, yogurt, black pepper	paprika
Andorra	Escudella de Pagès	onion, carrot, chickpeas, white cabbage, celery, turnip, pork ear, pork trotter, ham bone, chicken, lamb, veal, lard, white pudding, black pudding, vermicelli, rice	dried beans, potato
Austria	Wiener Schnitzel	veal, egg, milk, bread crumbs, flour, black pepper	
Belgium	Moules Frites	(mussels), celery, onion, black pepper, thyme, bay leaf, parsley, butter	potato
Belarus	Draniki	onion, wheat flour, egg, black pepper	potato
Bosnia	Herzegovina Čevapi	beef, lamb, onion, white of egg, black pepper	paprika
Bulgaria	Banitsa	filo pastry, egg, feta, yogurt, (oil)	
Czech Republic	Vepro Knedlo Zelo	pork, onion, egg, cumin, flour, semolina, uncooked sauerkraut, (oil), vinegar	potato
Croatia	Sarma	cabbage, beef (heifer), bacon, smoked meat, chicken stock, onion, garlic, rice, black pepper, Vegeta, (oil) wheat flour	paprika
Cyprus	Stifado	rabbit, onion, garlic, black pepper, balsamic vinegar, red wine, bay leaf, cinnamon, olive oil	tomato concentrate
Denmark	Smorrebrod of Prawns & Avocado	(prawns), red onion, mayonnaise, egg, butter, dill, rye bread	avocado (Alternative with smoked salmon)
Estonia	Mulgikapsad	sauerkraut, pearl barley, bacon, onion, bay leaf, sugar	

Table 1. Continued.

Country	Dish	Ingredients from the Old World	Ingredients from the Americas
Finland	Karjalanpaisti	beef, pork, butter, (oil), onion, bay leaf, black pepper, turnip, carrot	Jamaican chili grains
France	Pot-au-Feu	beef (braising, cheek, chuck, marrow bone), garlic, onion, carrot, turnip, leek, celery, black pepper, clove, thyme, bay leaf, parsley	potato
Germany	Saurbraten	red vinegar, red wine, onion, carrot, clove, bay leaf, juniper, black pepper, thyme, beef, cream, sugar	cornflour
Greece	Fasolada	onion, carrot, celery, bay leaf, olive oil, black pepper	white beans, tomato, (tomato concentrate)
Hungary	Goulash	beef, carrot, parsley, onion	paprika, tomato, pepper, potato
Iceland	Kjötsúpa	lamb, garlic, olive oil, onion, brown rice, thyme, oregano, green cabbage, carrot, swede	potato
Ireland	Irish Stew	lamb, onion, carrot, chives, parsley, (oil), butter, black pepper	potato
Italy	Pasta (Spaghetti all'Amatriciana)	spaghetti, pecorino, smoked bacon, black pepper	tomato, red chili
Latvia	Zirni Pelēki	grey peas, onion, smoked bacon, black pepper	
Lichtenstein	Käsknöpfle	flour, egg, gruyere, emmental, fontina, onion, butter	
Lithuania	Cepelinai	pork, onion, bacon, cream, black pepper	potato
Luxembourg	Judd mat Gaardebounen	smoked pork, broad beans, leek, onion, celery, white wine, butter, flour, bay leaf, winter savoury, black pepper, parsley	
Macedonia	Tavče Gravče	onion, garlic, flour, parsley or mint, black pepper	haricot beans, sunflower oil, paprika, red chili
Malta	Stuffat Tal Fenek	rabbit, onion, garlic, carrot, peas, bay leaf, curry, black pepper, red wine, olive oil	tomato, potato, paprika, (tomato concentrate)
Moldova	Mamaliga	butter	sieved maize
Monaco	Stockfish	(stockfish, stockfish 'boyaux'), onion, garlic, parsley, thyme, bay leaf, fennel, winter savoury, olives and olive oil, eau de vie, black pepper	tomato, red pepper, potato
Montenegro	Kačamak	feta	potato, yellow cornmeal
Netherlands	Stamppot	onion, bay leaf, green cabbage, black pepper, smoked sausage, milk, butter	potato
Norway	Farikal	lamb, cabbage, black pepper, wheat	
Poland	Bigos	sauerkraut, white cabbage, smoked bacon, kielbasas sausage, pork, veal, fat bacon, flour, onion, granny smith apple, dried ceps or chanterelles, bay leaf, nutmeg, olive oil, black pepper	tinned tomato, tomato coulis, paprika
Portugal	Bolinhos (Pastéis) de Bacalhau	(salted cod), egg, onion, parsley, nutmeg, black pepper	potato, sunflower oil
Romania	Sarmale	pork, veal, rice, onion, cabbage, parsley, beef stock cube, black pepper, (oil), white wine	tomato sauce
Russia	Pelmeni	flour, butter, egg, black pepper, beef, pork, onion, dill, fresh cream, gruyere	

Table 1. Continued.

Country	Dish	Ingredients from the Old World	Ingredients from the Americas
San Marino	Fagioli con le cotiche	pork, onion, carrot, garlic, olive oil, parsley, black pepper	haricot beans, tomato sauce
Serbia	Pljeskavica	beef, veal, pork, onion, black pepper, (sparkling water)	paprika. (Note: serve with pitta bread or chips)
Slovakia	Bryndzové Halušky	flour, egg, bacon, Bryndza cheese, parsley, (oil), butter	potato
Slovenia	Ajdovi Zganci	buckwheat, bacon, lard	
Spain	Paella Valenciana	olive oil, chicken, rabbit, artichokes, saffron, rosemary, rice, lemon	tomato, French beans, butter beans, mild chili
Sweden	Ärtsoppa med Fläsk	dried yellow peas, pork, onion, carrot, clove, thyme, bay leaf, stock cube	
Switzerland	Rösti à la bernaïse	bacon, lard, butter, milk	potato
Ukraine	Borchtch	pork, beetroot, carrot, white cabbage, onion, garlic, lard, butter, black pepper	potato, tomato concentrate
United Kingdom	Fish and Chips	(fish), beer, egg, milk, black pepper	potato

Table 1. Continued.

Region	Average number of ingredients from Old World	Average number of ingredients from the Americas	Ratio of Old World to the Americas
Africa	6.63	2.56	2.59
The Americas	8.60	2.91	2.96
Europe	7.09	1.32	5.37

Table 2. Summary of the ingredients showing the proportion of Old World and the Americas ingredients for each Continent.

Ingredient	Country	Ingredient	Country	Ingredient	Country
Lentil	Egypt	Frog	Dominica	Apple	Poland
Goat	Liberia	Rye	Denmark	Buckwheat	Slovenia
Ostrich	Swaziland	Pearl Barley	Estonia	Yellow peas	Sweden
Caper	Colombia	Fennel	Monaco	Beetroot	Ukraine
Chocolate	Mexico	Cep (Boletus)	Poland	Beer	United Kingdom

Table 3. Some of the single occurrences of ingredients in national dishes.

once it was introduced from the Americas, maize was quickly accepted in many parts of Africa one reason being that the plant itself resembled sorghum, which had long been cultivated there.

Only in the national dishes of thirteen countries do the number of ingredients from the Americas exceed, or equal in number, those from the Old World: in Cape Verde, Côte d'Ivoire, Sierra Leone, Equatorial Guinea, Guinea Bissau and Cameroon in West and Central Africa; in Tanzania, Malawi, Zambia and in East and Southern Africa; in Peru in the Americas and finally in Hungary, Moldova and Montenegro in Europe. (Table 5) Five of these dishes are simple recipes based on maize meal. Contrary to what I had originally speculated, there is no particular desire in the Americas to

construct the nations' national dishes from ingredients that originated in the Americas: it is in Africa that the American ingredients have made by far their greatest mark.

Quite quickly, in the centuries after 1492, many of the foods from both sides of the Atlantic were planted and grown on the other side of the Atlantic. African slaves later brought their foods to the Americas, and it has been argued, for example, that African indigenous rice contributed 'to the shaping of New World food systems' (Carney, 2001, pp.377). Indeed, rice is common component of many South and Central American national dishes. If we look at the starchy ingredients in these dishes we find that there are seventeen of these from the Old World and just eight from the Americas.

Ingredient	Africa	Americas	Europe	Total	Ingredient	Africa	Americas	Europe	Total
Meat, Egg, Fish (includes all ingredients from sea)					Coriander	7	6	0	13
At least one meat	30	18	32	80	Ginger	12	1	0	12
Beef	12	9	9	30	Aubergine	11	1	0	12
Chicken	14	9	3	26	Manioc/Cassava	10	2	0	12
Butter	8	4	14	26	Cumin	8	3	1	12
Seafood	11	9	5	25	Lemon	8	3	1	12
Egg	5	5	12	22	Vinegar	3	6	3	12
Pork	1	5	12	18	Sugar	3	7	2	12
Milk & cream	4	6	7	17	Celery	1	4	5	10
Bacon	0	3	9	12	Squash/Pumpkin/Courgette	2	7	0	9
Lamb	6	0	6	12	Cinnamon	5	2	2	9
Cheese	0	5	5	10	Clove	3	3	3	9
Veal	0	0	5	5	Plantain (inc. green banana)	3	5	0	8
Lard	0	0	4	4	Okra	5	3	0	8
Rabbit	0	0	3	3	Coconut	3	5	0	8
Vegetable, herbs and spices					Cayenne	6	1	0	7
Onion	41	29	32	102	Millet	7	0	0	7
Peppers, chili, paprika	45	25	14	84	Palm	7	0	0	7
Black pepper	19	16	28	63	Oregano	0	6	1	7
Tomato	31	17	11	59	Turnip	3	0	3	6
Garlic	28	18	9	55	Turmeric	6	0	0	6
Chili	28	12	4	44	Wine	1	0	5	6
Wheat/bread/flour	7	15	16	38	Chickpeas	4	0	1	5
Potato	4	7	18	29	Spinach	4	1	0	5
Red/green/sweet pepper	13	11	2	26	Shallot	2	3	0	5
Maize/corn	11	10	3	24	Old World beans	3	0	1	4
Carrot	7	2	12	21	Sunflower oil	0	2	2	4
Rice	7	8	6	21	Cardamom	4	0	0	4
Bay Leaf	5	3	13	21	Sesame	2	2	0	4
Parsley	3	6	11	20	Nutmeg	1	0	2	3
Olive oil	4	8	8	20	Orange	0	3	0	3
Peanut/oil/butter	16	2	0	18	Basil	1	2	0	3
Cabbage (fresh/preserved)	5	1	11	17	Mustard	0	2	0	2
American beans	1	9	6	16	Avocado	0	1	1	2
Paprika	4	2	8	14	Vegetarian (no meat/fish)	14	9	7	30

Table 4. Commonly occurring ingredients in the national dishes, showing how many occurrences of each ingredient for each continent.

The range of domesticated plants and animals that are used in the national dishes discussed here, and coming from the Old World, is much larger than those from the Americas. One reason is just the much larger land mass of an Old World and the numerous long-established complex

societies producing a larger number of domesticated ingredients as well as the long period of interaction between Asian, European and African foodstuffs. However, it is also likely that the ingredients brought by the colonisers to the Americas marginalised some

equivalent local ingredients used by the native Americans. Had, for example, the Americans colonised the Old World some of the many native Amazonian fruits and herbs might have replaced some of the dominant Old World fruits.

Production of food in its pre-Encounter homeland?

The consumption of individual foods from either side of the Atlantic, as included in the national dishes, has been addressed above. Is there any evidence that any of these foods are still predominantly grown or reared on their original side of the Atlantic? Crops that originated in Africa, and which might have been considered as typically still being cultivated there, such as finger millet or sorghum, have been grown for many years in great quantities outside their original homeland. We cannot preclude that there may well be some American food plants, which have been grown and consumed locally in their homelands, that might emerge at some time in the future. Some American foods may not have spread widely because they are very similar to widely used Eurasian ones. For example, Boldo (*Peumus boldo*), an aromatic tree of the Andes is used in Chili and Argentina but is similar to Bay leaf but with a hint of peppery cinnamon. It can now be bought online and in health food shops although there are some worries that it may be toxic to the liver (Frey, 2020).

Quinoa until recent years, was the one major crop that was mainly produced in its original homeland, but since the 1990s attempts have been made to grow it outside of South America. Why might quinoa be the one major food sources that, until recently, has been mainly grown in its original pre-1492 homeland? The most obvious explanation is that the productive non-bitter varieties are those which flourish at tropical high altitudes, hence the focus on production in the Andean highlands, most being grown between 2500m and 4000m. Another reason is that the Spanish colonisers and their descendants in South America considered quinoa to be an inferior native American food. However, many other 'native foods' from the Americas spread rapidly across the Atlantic. The Spanish reification of wheat, which was seen as 'the civilising cereal' made for a particularly strong rejection of the pseudocereal, quinoa (Lovera 1998, pp.126–132).

In 2017, according to the Food and Agriculture Organization of the United Nations world production in tons of quinoa was as follows: Peru, 78,657, Bolivia, 66,792, Ecuador 1,286 (Food and Agriculture Organization of the United Nations, 2019). However, these figures are misleading, if not incorrect. In recent years China has begun growing various varieties of quinoa and was producing up to 20,000 tons by 2018 (Yang *et al.* 2019, p.208). Quinoa is also grown in small quantities in the US, for example, in the high elevation San Luis Valley of Colorado (see, Colorado Quinoa) and in various other US states, and in Manitoba in Canada. In Africa, trials were carried out to grow quinoa in Kenya and Rwanda

Country	Dish	Ratio (OW:A)
Cape Verde	Cachupa	8:9
Côte d'Ivoire	Foutou	1:1
Equatorial Guinea	Pépé soup (sup)	3:3
Guinea Bissau	Caldo de Mancara	3:3
Sierra Leone	Groundnut Stew	5:6
Cameroon	Ndolé	4:4
Malawi	Nsima	0:1
Tanzania	Ugali	1:1
Zambia	Nshima	0:1
Peru	Ceviche	4:5
Hungary	Goulash	4:4
Moldova	Mamaliga	1:1
Montenegro	Kaçamak	1:2

Table 5. Countries with a majority of, or equal number of, American ingredients shown as a ration of Old World:Americas.

(Oyoo, Githire & Ayiecho, 2010). Numerous scientific papers are being published reviewing the growing of various varieties of quinoa, for example, in India, Australia, Morocco and Egypt (for Egypt see, Ayman *et al.* 2019). Even in Europe attempts are being made to find a cultivar that would grow in European conditions, in Germany and France in particular, with the aim of finding a non-bitter tasting cultivar that tolerates European conditions (Innovations Report, 2018). The British Quinoa Company has also been growing and producing a range of quinoa products which are now on sale in Sainsburys and Waitrose (2019). Finally, a number of Irish farms have also undertaken trials of growing quinoa. A six-hectare field was planted in Co. Carlow in 2015, while David Walsh-Kemmis in Stradbally, Co. Laois undertook a trial for Glanbia for two years and writes '[q]uinoa [...] grows very well here and seems to like the light, sandy soil that we have on our farm.' The cultivars used, *Atlas* and *Jessie*, were developed in the Netherlands (Allen, 2017). More research needs to be undertaken to understand why the production of quinoa was for so long restricted to its pre-Encounter location, but it appears that its production is now joining many of the post-1492 ingredients in being fully globalised.

Conclusions

The analysis of national dishes suggests that there is little evidence of any preference for consumption of the pre-Encounter dishes in their original homelands. Food, both plants and animals, from the Columbian Exchange, spread rapidly across most of the world. Foods seem to globalise very quickly and in most cases their importance in a given location is closely linked to how well a plant grows, or how

well particular animals can prosper. Local cultural beliefs will also influence the acceptance or not of a particular food.

In the case of the growing of quinoa, the development of new cultivars in recent years is now enabling the production of this pseudocereal to escape the confines of the high Andes. This may be one of the last ripples from the Columbian exchange.

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